EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

VENTANA MEDICAL SYSTEMS, INC., Plaintiff, v. DAKOCYTOMATION CALIFORNIA INC., Defendant.	C.A. No. 04-1522-GMS

EXPERT REPORT OF ANDRE SHARON, Ph.D.

1. I am a Professor of Manufacturing Engineering at Boston University and the Executive Director of the Fraunhofer Center for Manufacturing Innovation. Prior to joining the Fraunhofer Center for Manufacturing Innovation and Boston University, I co-founded and served as the Executive Officer of the Massachusetts Institute of Technology Manufacturing Institute. I also served as the Associate Director of the Massachusetts Institute of Technology Laboratory for Manufacturing and Productivity.

2. I received my Bachelor of Science degree from the Polytechnic Institute of New York, and my Master of Science and Doctor of Philosophy degrees from the Massachusetts Institute of Technology. A copy of my resume is attached as Exhibit A, and a list of my publications is attached as Exhibit B.

3. I have twenty years of academic and industrial experience developing and deploying state-of-the-art automation to industry, ranging from sub-micron, high-precision machinery for optoelectronics, biotechnology, and semiconductor manufacturing to high-speed assembly of consumer products. I am the Editor-in-Chief of the International Journal, Robotics and Computer Integrated Manufacturing. I am a named inventor on six issued United States patents.

4. I have been retained by the firm of Wilson Sonsini Goodrich & Rosati as a consultant in connection with the above-captioned lawsuit. For my work on this matter, I am being compensated at my consulting rate of $250 per hour for non-testifying time, and $350 per hour for deposition and courtroom appearances. In the preceding four years, I have testified as an expert by deposition in *Vision BioSystems (Trading) USA, Inc. v. Ventana Medical Systems, Inc.*, Case No. 03-CV-10391-GAO (D. Mass.) and *Ventana Medical Systems, Inc. v. BioGenex Laboratories, Inc.*, Case No. No. CV-03-92-TUC-RCC (D. Ariz.).

5. If called as an expert witness in this matter, I anticipate that my testimony may concern the matters addressed below. My anticipated testimony may be affected by the production of additional information and/or positions defendant takes on the topics set forth in this report. I have been informed that defendant may communicate at least some of those positions to plaintiff some time after this report is prepared, such as in the form of deposition testimony to be given by its experts. After I have an opportunity to review those materials, I may amend or supplement this report.

6. In connection with formulating the opinions set forth in this report, I have reviewed at least the material listed in the attached Exhibit C.

7. I have been asked to compare claims 1, 2, 3, and 45 of U.S. Patent No. 6,827,901 ("the '901 patent") with the Artisan Staining System sold by DakoCytomation California, Inc. ("the Artisan").

8. Claims 1, 2, 3, and 45 of the '901 patent read as follows:

> 1. A biological reaction apparatus for dispensing a selected reagent to a slide containing a sample, said biological reaction apparatus comprising:
>
> [a] a reagent carousel having a plurality of reagent container supports thereon;
>
> [b] a homing and indexing device, operatively coupled to the reagent carousel, for identifying the position of each reagent container support with reference to a home position;
>
> [c] a motor engaging the reagent carousel and operatively coupled to said homing and indexing device, for rotating the reagent carousel and

positioning a preselected reagent container support in a reagent supply zone, wherein said reagent supply zone is oriented so that reagent in a container in said preselected reagent container support is dispensable to a slide and wherein each of the reagent container supports is arranged to accommodate a reagent container such that it is positioned above a slide when in the reagent supply zone whereby the reagent is dispensable from a lower end of said container onto the slide;

[d] a sample carousel arranged beneath said reagent carousel for cooperation therewith, and having a plurality of slide supports with each slide support engaging a slide having a substantially planar support surface, said slide having a reagent agitation zone for adding and mixing reagents thereto located on the slide's upper surface; and

[e] an air mixer comprising an air jet and an air supply means positioned adjacent to a said reagent agitation zone for mixing reagents, said air mixer directing a jet of air at the reagent agitation zone thereby inducing mixing in the reagent agitation zone.

2. The biological reaction apparatus of claim 1, wherein said sample carousel may be arranged to allow said sample supports to be positioned in said reagent supply zone.

3. The biological reaction apparatus of claim 1, wherein the reagent carousel is rotatably mounted on a reagent carousel support, and

wherein the homing and indexing device further comprises a proximity detector and an object detectable by the proximity detector when the proximity detector and said object are in close proximity, one of said object and said proximity detector being mounted on the reagent carousel, and the other of the object and said proximity detector being mounted on the reagent carousel support in a position adjacent the path of the other.

45. A biological reaction apparatus for dispensing a selected reagent to a slide containing a sample, said biological reaction apparatus comprising:

[a] a reagent carousel having a plurality of reagent container supports thereon;

[b] a homing and indexing device, operatively coupled to the reagent carousel, for identifying the position of each reagent container support with reference to a home position;

[c] a motor engaging the reagent carousel and operatively coupled to said homing and indexing device, for rotating the reagent carousel and positioning a preselected reagent container support in a reagent supply zone, wherein said reagent supply zone is oriented so that reagent in a container in said preselected reagent container support is dispensable to a slide sample and wherein each of the reagent container supports is arranged to accommodate a reagent container such that it is positioned above a slide sample when in the reagent supply zone whereby the reagent is dispensable from a lower end of said container onto the slide sample;

[d] a carousel arranged beneath said reagent carousel for cooperation therewith, and having a plurality of slide supports with each slide support engaging a slide including a sample, said slide having a substantially planar support surface, said slide having a reagent agitation zone for adding and mixing reagents thereto located on the slide's upper surface; and

[e] an air mixer comprising an air jet and an air supply means positioned adjacent to said reagent agitation zone for mixing reagents, said air mixer directing a jet of air at the reagent agitation zone thereby inducing mixing in the reagent agitation zone.

I have identified the elements of claims 1 and 45 by bracketed letters for ease of reference.

9. I understand that the Court has provided the following definitions of claim language:

"**reagent agitation zone**" means "an area on the slide's upper surface where reagents are added and mixed."

"**air mixer**" means "the device, including the air jet and the air supply means, that is positioned adjacent to the reagent agitation zone for mixing reagents."

"**air jet**" means "a stream of air."

"**air supply means**" means "a device for supplying air, comprising the nozzle."

"**adjacent**" means "next to, but not above or beneath."

10. As explained below, I conclude that the Artisan includes all the elements of claims 1, 2, 3 and 45. My analysis cites various pertinent evidence, but other evidence that I reviewed is also relevant to these issues. Additionally, my inspection of the Artisan on January 6, 2006, confirms the operation of these systems, as described below. I may use photographs and videotapes from the inspection to further support my opinions.

Claim 1

11. The preamble of claim 1 calls for a "biological reaction apparatus for dispensing a selected reagent to a slide containing a sample." The Artisan is such an

apparatus. It is DakoCytomation's "new generation of staining automation, providing you with the flexibility of manual staining coupled with the precision and consistency of automation." Artisan Staining System User Guide ("User Guide"), Rev. A (June 2005) p. 13. The User Guide describes the ability of the Artisan to dispense reagents to a slide containing a sample. The "dispenser assembly at the base of the reagent pack releases a measured volume of reagent directly onto the slide." User Guide p. 13. This is consistent with the preamble.

12. Element [a] of claim 1 calls for "a reagent carousel having a plurality of reagent container supports thereon." Mr. Scott Leon, DakoCytomation's Director of Operations, confirmed that "The Artisan has a reagent carousel." Leon Depo. p. 39:12-15. The reagent carousel can hold "up to 50 reagent packs." User Guide p. 13. Mr. Leon confirmed that on the reagent carousel there is one slot for each of the 50 reagent pack positions. *See* Leon Depo. p. 54:7-10 ("Q. (By Mr. Reed) Right. The question is, on the reagent carousel there is a slot for each of the 50 reagent pack positions, correct? A. Correct."). The User Guide instructs users as follows: "Holding the reagent pack in one hand, slide the mounting guide on the back of the reagent pack into the slots on the reagent carousel until the pack is completely seated." User Guide p. 77. Once seated, the reagent pack is supported such that it is constrained at least circumferentially and radially through the interaction of the reagent pack mounting guide and the slots described above. The slots are the plurality of reagent container supports called for in element [a] of claim 1. The testimony of Mr. Leon and the description of the Artisan given in DakoCytomation documentation were confirmed by my own observations of the Artisan.

13. Element [b] of claim 1 calls for "a homing and indexing device, operatively coupled to the reagent carousel, for identifying the position of each reagent container support with reference to a home position." The Artisan reagent carousel positioning system includes a "reagent carousel motor assembly and the reagent

carousel home sensor. The home sensor detects the carousel home position, allowing the carousel to be positioned precisely by the motor assembly." Artisan Staining System Service Manual ("Service Manual") Rev. A (Nov. 2004) p. 14. Furthermore, "All reagent positions are based off the home position." Artisan: Mechanical System Overview ("Overview") by Jim Russo (April 2004) p. DC 042542. The home sensor together with the encoder of the reagent carousel motor and associated control circuitry and algorithms constitute the "homing and indexing device" described in the claim. *See* Overview p. DC 042542 ("The reagent positioning system has a servo motor and an encoder for monitoring the carousel position relative to the home position."). This allows the Artisan to identify each reagent container position with reference to the home position, making it operatively coupled to the reagent carousel.

14. Element [c] of claim 1 calls for "a motor engaging the reagent carousel and operatively coupled to said homing and indexing device, for rotating the reagent carousel and positioning a preselected reagent container support in a reagent supply zone, wherein said reagent supply zone is oriented so that reagent in a container in said preselected reagent container support is dispensable to a slide and wherein each of the reagent container supports is arranged to accommodate a reagent container such that it is positioned above a slide when in the reagent supply zone whereby the reagent is dispensable from a lower end of said container onto the slide." The Artisan Service Manual depicts a reagent carousel motor in Figure 8-15, shown below:

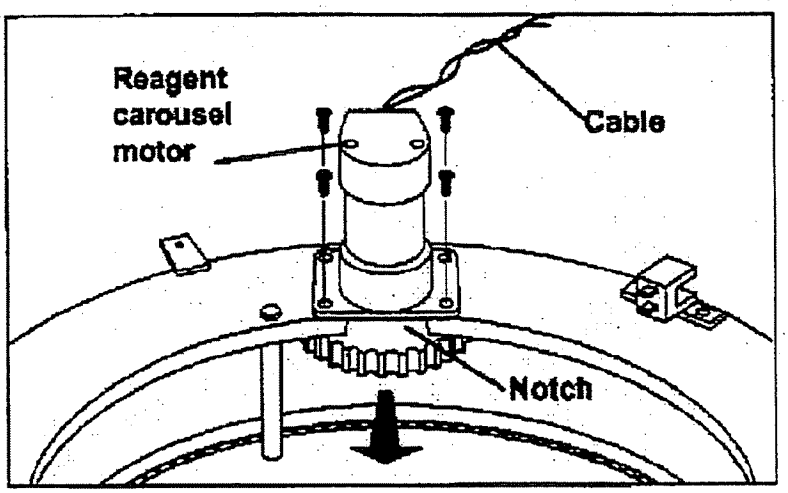
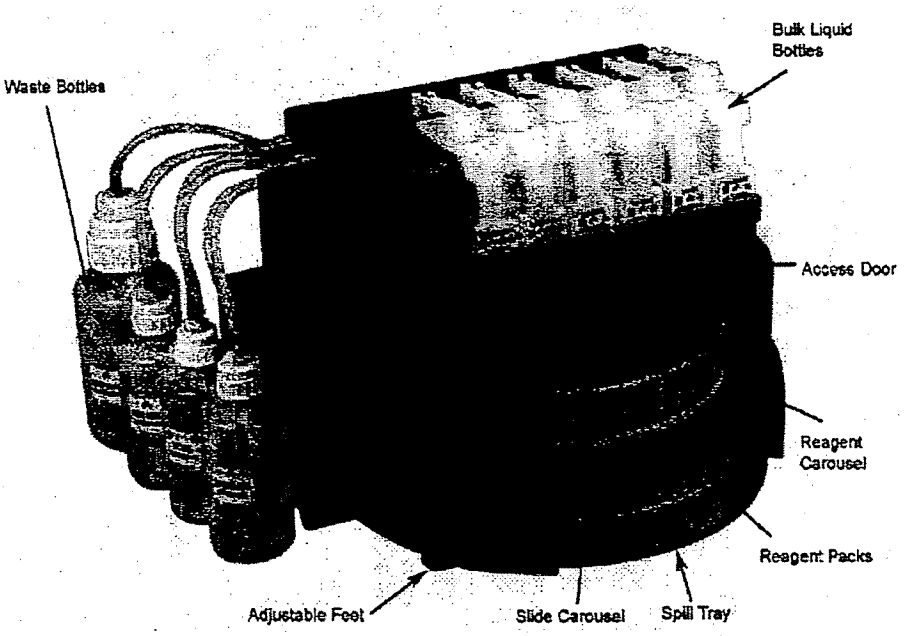


Figure 8-15. Removal of reagent carousel motor assembly

Also shown in the figure above, but not labeled, are the reagent carousel home sensor (on the right side of the motor) and the reagent carousel home sensor flag (on the left side of the motor). The Artisan reagent carousel positioning system includes a "reagent carousel motor assembly and the reagent carousel home sensor. The home sensor detects the carousel home position, allowing the carousel to be positioned precisely by the motor assembly." Service Manual p. 14. The motor is thereby operatively coupled to the homing and indexing device (described in paragraph 13 above) as stated in the claim. The reagent carousel positioning system of the Artisan "positions each slide under a reagent dispensing station for application of measured amounts of reagents. The reagent carousel, located above the slide carousel and controlled separately, positions the appropriate reagent pack at the dispensing station for application of that reagent to the slide on the slide carousel below." Service Manual p. 12. Mr. Leon confirmed that the reagent is dispensable from the lower end of the reagent pack as called for in element [c]. Leon Depo. p. 50:25-51:2 (Q. And that dispenser mechanism dispenses the reagent out the bottom of the reagent pack, correct? A. That's correct."). All of this was confirmed by my own observation of the Artisan.

15. Element [d] of claim 1 calls for "a sample carousel arranged beneath said reagent carousel for cooperation therewith, and having a plurality of slide supports with each slide support engaging a slide having a substantially planar support surface, said slide having a reagent agitation zone for adding and mixing reagents thereto located on the slide's upper surface." The Artisan includes a slide carousel that "is under or beneath the reagent carousel." Leon Depo. p. 51:25-52:5. The slide carousel beneath the reagent carousel is illustrated in the photograph on page 14 of the User Guide:



The slide carousel includes flat heater plates on which the slides rest. *See* Leon Depo. p. 55:19-56:3 ("A. The slides don't rest on the heaters. They rest on the heater plate, then underneath the heater plate are the heaters. Q. So the heater plate is the metal portion you can see from above? A. And that's flat. Q. That's flat, just like the slide? A. It's flat – where the slide rests it's flat."). The slides used with the Artisan are flat, common microscope slides. *See* Leon Depo. p. 55:16-18 ("Q. The slides are flat slides, common microscope slides, correct? A. Correct."). This is consistent with my own

observation in which I saw a slide carousel with 48 individual heater plates, each of which would support a microscope slide. On each slide, there is a reagent agitation zone, which I was told the Court decided means "an area on the slide's upper surface where reagents are added and mixed." This was confirmed by Mr. Leon in his deposition. *See* Leon Depo. p. 55:1-15 ("Q. And so that slide clip provides walls that define an area on a slide, right? A. Correct. Q. That's the area where a sample will be mounted on the slide, correct? A. Correct. Q. And that's the area where reagents will be dispensed? A. Correct. Q. That's the area where the bulk fluids will be dispensed as well? A. Correct. Q. And that's the area where the reagents will be mixed, correct? A. Correct.").

16. Element [e] of claim 1 calls for "an air mixer comprising an air jet and an air supply means positioned adjacent to a said reagent agitation zone for mixing reagents, said air mixer directing a jet of air at the reagent agitation zone thereby inducing mixing in the reagent agitation zone." The Artisan has an air mixer which "directs an oscillating air jet onto the slide at the mixing station for agitating the contents of the slide. It consists of an air nozzle and a stepper motor for moving the nozzle back and forth horizontally above the slide." Service Manual p. 16. The "air stream mixes and evenly distributes the reagents over the surface of the slide." User Guide p. 13. *See also* Leon Depo. p. 62:24-63:1 ("Q. Okay. In the Artisan the mixer uses air to mix the reagents, right? A. Correct."). I note that during his deposition, Mr. Leon referred to the nozzle mentioned in this documentation as a "plenum." *See* Leon Depo. p. 70:19-71:2. The rectangular slit and the surrounding internal boundaries that define that slit within the plenum constitute the nozzle described in element [e] and defined by the Court's claim construction.[1] When the plenum is in the home position

[1] I also note that the nozzle, or "plenum," referred to in the DakoCytomation documentation and by Mr. Leon includes other functionality besides that of a nozzle, including that of a sensor flag as well as a guide that prevents rotation of the plenum. *See* Leon Depo. p. 97:3-9.

and at the beginning and end of each mixing cycle, the nozzle and the air jet are next to, but not above or beneath the reagent agitation zone as defined by the Court. *See* Leon Depo. p. 96:25-97:2.

17. I have been asked to consider whether the Artisan's air mixer performs substantially the same function, in substantially the same way, to achieve substantially the same result, as the claimed "air mixer" of element [e]. I conclude that it does.

18. The function of the air mixer as called for in claim 1 is to mix reagents in a reagent agitation zone of a slide. According to the User Guide, the Artisan air mixer "mixes and evenly distributes the reagents over the surface of the slide." User Guide p. 13; *see also* Service Manual p. 12 ("A separate mixer station allows reagents to be mixed and uniformly spread on each slide."). I conclude that the Artisan mixer performs the same function as is described by element [e] of the claim.

19. The way the above function is performed is through mechanical agitation of the reagents caused by the transfer of kinetic energy from the air jet to the reagents. The air mixer in the Artisan works in the same way in that it "directs an oscillating air jet onto the slide at the mixing station for agitating the contents of the slide." Service Manual p. 16.

20. The result of the claimed mixing of element [e] is increased uniformity of the reagent solution and increased interaction of the reagents with the sample. The air mixer in the Artisan achieves this same result. As Mr. Leon confirmed, the mixing achieves "more of a uniform mixture when there's more than one reagent on there." *See* Leon Depo. p. 62:9-17. A further result of the mixing in the Artisan is spreading the reagent onto the sample surface, thus increasing the interaction between the reagent and the sample. *See* Leon Depo. p. 62:18-23.

21. I have been asked to consider whether as of December 2004, the air mixer device in the Artisan was known to be interchangeable with an air mixer that is positioned next to, but never above or beneath the reagent agitation zone. I conclude

that it was. The goal of mixing is to increase the uniformity of the reagent solution and to agitate the reagents relative to the sample. An engineer designing such a system in 2004 would know that this can be accomplished with a moving, vertical air jet that originates from above or with an angled air jet that originates from the side. Both air mixers transfer kinetic energy from the air jet to the reagents, achieving the above goal.

Claim 2

22. Claim 2 states "The biological reaction apparatus of claim 1, wherein said sample carousel may be arranged to allow said sample supports to be positioned in said reagent supply zone." In the Artisan, "Each slide rotates to the dispensing station, where the appropriate reagent pack positions itself above the slide." User Guide p. 13. The Artisan includes a slide carousel positioning system which "places the correct slide at one of these stations, depending on the operation required by the staining protocol: Reagent dispensing . . . " Service Manual p. 14. Mr. Leon validated this feature of the Artisan during his deposition when he confirmed that "if you wanted a particular slide to get a reagent the slide carousel would rotate so that that slide is in the reagent dispensing station." Leon Depo. p. 56 :11-15. During my observation of the Artisan, I confirmed that the sample carousel can rotate and position slide samples on supports in the "reagent supply zone" (*i.e.*, reagent dispensing station).

Claim 3

23. The preamble of claim 3 calls for "The biological reaction apparatus of claim 1, wherein the reagent carousel is rotatably mounted on a reagent carousel support." The reagent carousel of the Artisan rotates around a "reagent carousel mounting ring." Leon Depo. p. 60:8-10. This reagent carousel mounting ring is the reagent carousel support described in the preamble of claim 3.

24. The next element of claim 3 states "wherein the homing and indexing device further comprises a proximity detector and an object detectable by the proximity detector when the proximity detector and said object are in close proximity, one of said object and said proximity detector being mounted on the reagent carousel, and the other of the object and said proximity detector being mounted on the reagent carousel support in a position adjacent the path of the other." The Artisan includes a reagent carousel home sensor mounted on the stationary reagent carousel mounting ring. The Artisan also includes a reagent carousel home sensor flag mounted on the reagent carousel. This flag is detectable by the home sensor when the home sensor and the flag are in close proximity. The sensor and flag are shown in Figure 8-17 of the Service Manual:

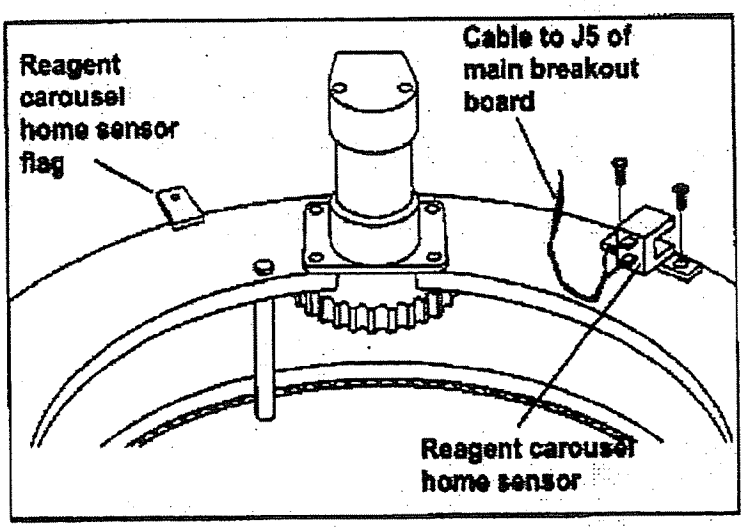


Figure 8-17. Removal of the reagent carousel home sensor

This arrangement was confirmed by Mr. Leon in his deposition. *See* Leon Depo. p. 41:12-42:12. When the reagent carousel rotates such that the home sensor flag is detected by the home sensor, the Artisan determines the home position of the reagent carousel.

Claim 45

25. The preamble and elements [a], [b] and [e] of claim 45 are identical to the preamble and elements [a], [b] and [e] of claim 1. As described above, the Artisan includes all aspects of these elements.

26. Element [c] of claim 45 calls for "a motor engaging the reagent carousel and operatively coupled to said homing and indexing device, for rotating the reagent carousel and positioning a preselected reagent container support in a reagent supply zone, wherein said reagent supply zone is oriented so that reagent in a container in said preselected reagent container support is dispensable to a slide sample and wherein each of the reagent container supports is arranged to accommodate a reagent container such that it is positioned above a slide sample when in the reagent supply zone whereby the reagent is dispensable from a lower end of said container onto the slide sample." This element differs from element [c] of claim 1 only by the addition of the word "sample" following the word "slide." In other words, the word "slide" in claim 1 is replaced by the phrase "slide sample" in claim 45. Despite this substitution, and for the reasons stated above in connection with element [c] of claim 1, the Artisan includes all the aspects of element [c] of claim 45.

27. Element [d] of claim 45 calls for "a carousel arranged beneath said reagent carousel for cooperation therewith, and having a plurality of slide supports with each slide support engaging a slide including a sample, said slide having a substantially planar support surface, said slide having a reagent agitation zone for adding and mixing reagents thereto located on the slide's upper surface." This element differs from element [d] of claim 1 only by the deletion of the word "sample" prior to the word "carousel" and the addition of the phrase "including a sample, said slide" following the phrase "engaging the slide." Despite these changes, and for the reasons stated above in connection with element [d] of claim 1, the Artisan includes all the aspects of element

[d] of claim 45. Furthermore, the above discussion of whether the Artisan's air mixer performs substantially the same function, in substantially the same way, to achieve substantially the same result, as the claimed "air mixer" of element [e] applies equally to claims 1 and 45.

Dated: 1-31-06

Andre Sharon, Ph.D.

EXHIBIT A

Dr. Andre Sharon
Executive Director
Fraunhofer Center for Manufacturing Innovation
Professor of Manufacturing Engineering
Boston University

In a Nut Shell:

Experience:	20 years of academic and industrial experience developing and deploying state-of-the-art automation to industry, ranging from sub-micron, high-precision machinery for optoelectronics biotechnology, and semiconductor manufacturing to high-speed assembly of consumer products.
Technical Expertise:	Electromechanical Design, Automation Systems, Servo Control
Education:	Ph.D. Mechanical Engineering, Class of '89 Massachusetts Institute of Technology

Professional Biography:

Prof. Andre Sharon has accumulated over 20 years of experience, both industrial and academic, developing and deploying computer-controlled automation equipment for several industries, ranging from sub-micron, high-precision machinery for optoelectronics, biotechnology, and semiconductor fabrication to high-speed assembly of consumer products. As Director of the Fraunhofer Center for Manufacturing Innovation and Professor of Manufacturing Engineering at Boston University, Prof. Sharon works closely with faculty, students and engineers to develop next-generation manufacturing technologies for local and international clients. Drawing upon Fraunhofer's and Boston University's vast research base and working closely with industry, the Center goes beyond the scope of traditional academic research to develop and deploy actual working technologies all the way to the factory floor.

Prior to joining Fraunhofer / Boston University, Prof. Sharon co-founded and served as Executive Officer of the MIT Manufacturing Institute, created to bridge the gap that exists between traditional academic research and the needs of industry. Prof. Sharon led a large program aimed at cost reducing the manufacture of optoelectronics and fiber optic systems through the development of cost-effective packaging, pigtailing and handling equipment. He developed and deployed several machines that greatly reduce the cost of fabricating photonic devices. Additionally, Prof. Sharon has consulted extensively for industry in the area of cost-effective automation.

Prior to joining MIT, Prof. Sharon spent seven years at IBM's T.J. Watson Research Center and IBM's General Technology Division developing manufacturing machinery and test equipment for computer components.

Prof. Sharon received his M.S. and Ph.D. in Mechanical Engineering from the Massachusetts Institute of Technology, and his B.S. in Mechanical Engineering from the Polytechnic Institute of New York. He is the Editor-in-Chief of the International Journal, *Robotics and Computer Integrated Manufacturing*.

In September of 2000, Prof. Sharon founded kSARIA Corporation, a well funded early-stage company focused on providing cutting-edge process automation equipment to the optical communication industry. Recently, he co-founded Boston Array Technologies, a company which develops new diagnostic tools based on peptide arrays synthesis technology.

Prior Professional Experience:

MIT Manufacturing Institute — Cambridge, MA
Co-founder and Executive Director — 1991-1998

Co-founded the MIT Manufacturing Institute: an advanced technology development organization, established with seed funding from the National Science Foundation, to accelerate the process of scaling up basic research into usable technologies, processes and machinery for industry.

Worked closely with industry to develop automated machinery for optoelectronics and semiconductor manufacture, composites fabrication, medical applications, paper handling and high-speed assembly.

Led a large-scale effort aimed at reducing the manufacturing cost of optoelectronics and fiber optic systems through the development of cost-effective packaging and handling machinery. Developed and deployed automated machines for pigtailing fibers to chips, winding complex gyroscope coil patterns, assembling optical circuits and preparing fibers for attachment.

MIT Laboratory for Manufacturing and Productivity — Cambridge, MA
Associate Director — 1989-1991

Conducted research in the areas of cost-effective flexible automation, real time sensors, high-reliability transfer lines and composites fabrication.

Served as industrial liaison for the Laboratory.

IBM T.J. Watson Research Center — Yorktown Heights, N.Y.
1984-1989

Developed the first PC-based, computer-controlled industrial robot and worked on the automation of internal operations for the manufacture of computer components.

Conducted numerous public relations tours, demonstrations and talks on manufacturing automation.

IBM General Technology Division — East Fishkill, N.Y.
1981-1984

Worked on thermal packaging of multi-chip modules.
Designed test equipment for the life span of high-end computer modules.
Developed and implemented manufacturing processes for new computer modules.
Evaluated the impact of new product introductions on existing manufacturing lines.

U.S. Citizen

EXHIBIT B

Publications of Dr. Andre Sharon

1. A. Sharon and D. E. Hardt, "Enhancement of Robot Accuracy Using Endpoint Feedback and a Macro-Micro Manipulator System," *Proceedings of the American Control Conference,* June 1984.

2. A. Sharon and E. Carey, "Real Time Control of an Anthropomorphic Robot Using AML and the IBM Personal Computer," *IBM Research Report (RC 11065 #49703),* March 1985.

3. A. Sharon and E. Carey, "AML + PC = CIM?" *Computers in Mechanical Engineering,* July 1985.

4. A. Sharon, "Pneumatically Servoed Robot Gripper," *IBM Research Report (RC 1134951140),* September 1985.

5. A. Sharon and D. E. Hardt, "More Analysis and Experimentation on a Macro / Micro Manipulator System," *Proceedings of the ASME Winter Annual Meeting,* December 1987.

6. A. Sharon, "High Bandwidth Force Regulation and Inertia Reduction Using a Macro / Micro Manipulator System," *Proceedings of the IEEE International Conference on Robotics and Automation,* April 1988.

7. A. Sharon, N. Hogan, and D. E. Hardt "Controller Design in the Physical Domain (Application to Robot Impedance Control)," *Proceedings of the IEEE International Conference on Robotics and Automation,* May 1989.

8. A. Sharon, N. Hogan, and D. E. Hardt, "Controller Design in the Physical Domain," *Proceedings of the American Control Conference,* June 1989.

9. A. Sharon, Ed. *Issues in Design/Manufacture Integration – 1990,* ASME Publication #G00542, New York, November 1990.

10. A. Sharon, N. Hogan, and D. E. Hardt, "Controller Design in the Physical Domain," *Journal of the Franklin Institute,* Volume 328, No. 5/6 pp. 697-721, 1991.

11. A. Sharon, Ed. *Issues in Design/Manufacture Integration – 1991,* ASME Publication #H00708, New York, November 1991.

12. N. Hogan, H.I. Krebs, J. Charnarrong, P. Srikrishna, and A. Sharon, "MIT-MANUS: A workstation for Manual Therapy and Training I," *Proceedings of robot and Human Communication RO-MAN '92 – IEEE,* Tokyo, September 1992.

13. N. Hogan, H.I. Krebs, J. Charnarrong, P. Srikrishna, and A. Sharon, "MIT-MANUS: A Workstation for Manual Therapy and Training II," *Proceeding of the SPIE (Society of Photo-optical Instrumentation Engineers) Conference on Telemanipulator Technology,* Boston, November 1992.

14. A. Sharon, N. Hogan, and D.E. Hardt, "The Macro / Micro Manipulator: An Improved Architecture for Robot Control," International *Journal of Robotics and Computer Integrated Manufacturing,* Volume 10, No. 3, pp. 209-222, June 1993.

15. V. Sharma and A. Sharon, "Optimal Orientation of Flakes in Oriented Strand Board (OSB)," *Journal of Experimental Mechanics,* Volume 33, No. 2, pp. 91-98, June 1993.

16. A. Sharon, "Fostering Technology Transfer Through Industry-University Cooperation: A Practitioner's View at MIT," *Empirica,* Volume 21, No. 3, pp. 285-296, 1994.

17. A. Sharon and S. Lin, "Development of an Automated Fiber Optic Winding Machine for Gyroscope Production," *International Journal of Robotics and Computer Integrated Manufacturing*, Volume 17, No. 3, pp. 223-231, June 2001.

18. A. Sharon, A. Bilsing, G. Lewis, and X. Zhang, "Manufacturing of 3D Microstructures Using Novel UPSAMS Process for MEMS Applications," Nano and Microelectromechanical Systems (NEMS and MEMS) and Molecular Machines, *Proceedings of the Materials Research Society Syposium*, 2003

19. A. Sharon, A. Bilsing, G. Lewis, and X. Zhang, "Manufacturing of 3D Microstructures Using Novel UPSAMS Process (Ultra Precision Manufacturing of Self-Assebled Micro Systems)," *Proceedings of the IEEE 16th International Conference on Micro Electro Mechanical Systems (MEMS 03)*, Kyoto, Japan, January 2003.

20. H. Yu, A. Gruntzig, Y. Zhao, A. Sharon, B. Li, and X. Zhang, "Rapid Prototyping 3D Microstructures on Soft and Rigid Templates Using a Scanning Laser System," Proceeding of the 7th International Conference on Miniaturized Chemical and BioChemical Analysis Systems (microTAS 2003), Squaw Valley, CA, USA, October 5-9, 2003, pp. 347-350.

21. H. Yu, A. Gruntzig, A. Sharon, B. Li, and X. Zhang, "Direct Writing of 3D Microstructures Using a Scanning Laser System," Micro- and Nanosystems, Materials Research Society Symposium Proceedings, 782 (2004), A11.5.1-6.

22. Biao Li, H. Yu, A. Sharon, and X. Zhang, "Rapid Three Dimensional Manufacturing of Microfluidic Structures Using a Scanning Laser System," *Applied Physics Letters*, 85 (12) (2004) 2426-2428.

23. B. Li, J. Menger, T. Walsh, H. Wirz, A. Sharon, "Development of quasi-passive optical substrates for photonic packaging", Proceeding of the 18th IEEE International Conference on Micro Electro Mechanical Systems (MEMS '05), Miami Beach, FL, USA, January 30 - February 3, 2005, pp. 104-107

24. Aurelien Gueit, Andre Sharon, Biao Li, "Direct laser writing of functional microfluidic structures on a single su-8 layer", 9th International Conference on Miniaturized Chemical and BioChemical Analysis Systems (microTAS '05), Boston, MA, USA

25. Hui Yu, Biao Li, Andre Sharon, Xin Zhang, "Cell sorting and analysis chip for single cell assays", 9th International Conference on Miniaturized Chemical and BioChemical Analysis Systems (microTAS '05), Boston, MA, USA

EXHIBIT C

Exhibit C

Materials Reviewed

Pleadings and Discovery

Ventana Medical Systems, Inc.'s Opening Claim Construction Brief (10/17/05)

Declaration of Matt Reed in Support of Ventana's Opening Claim Construction Brief (with exhibits) (10/17/05)

DakoCytomation California Inc.'s Markman Brief (10/17/05)

Declaration of Timothy Devlin, Esq. (with exhibits) (10/17/05)

Ventana's Answering Claim Construction Brief (11/7/05)

Declaration of Matt Reed in Support of Ventana's Answering Claim Construction Brief (with exhibits) (11/7/05)

DakoCytomation's Reply to Ventana's Claim Construction Brief (11/7/05)

Order Construing the Terms of U.S. Patent No. 6,827,901 (12/13/05)

Depositions

Deposition of Scott Leon taken January 6, 2006

Patents and File Histories

U.S. Patent No. 6,827,901

Electronic text version of U.S. Patent No. 6,827,901

File History for U.S. Patent No. 6,827,901 (Application No. 10/137,169)

Documents Produced

Documents Produced by Ventana (VT Bates numbers)

75877

Documents Produced by DakoCytomation (DC Bates numbers)

5714-5722, 8924-8944, 9067-9233, 10833-10839, 11986-11997, 16204-16218, 16833-16865, 19710-19821, 20180, 20380, 42510-42548

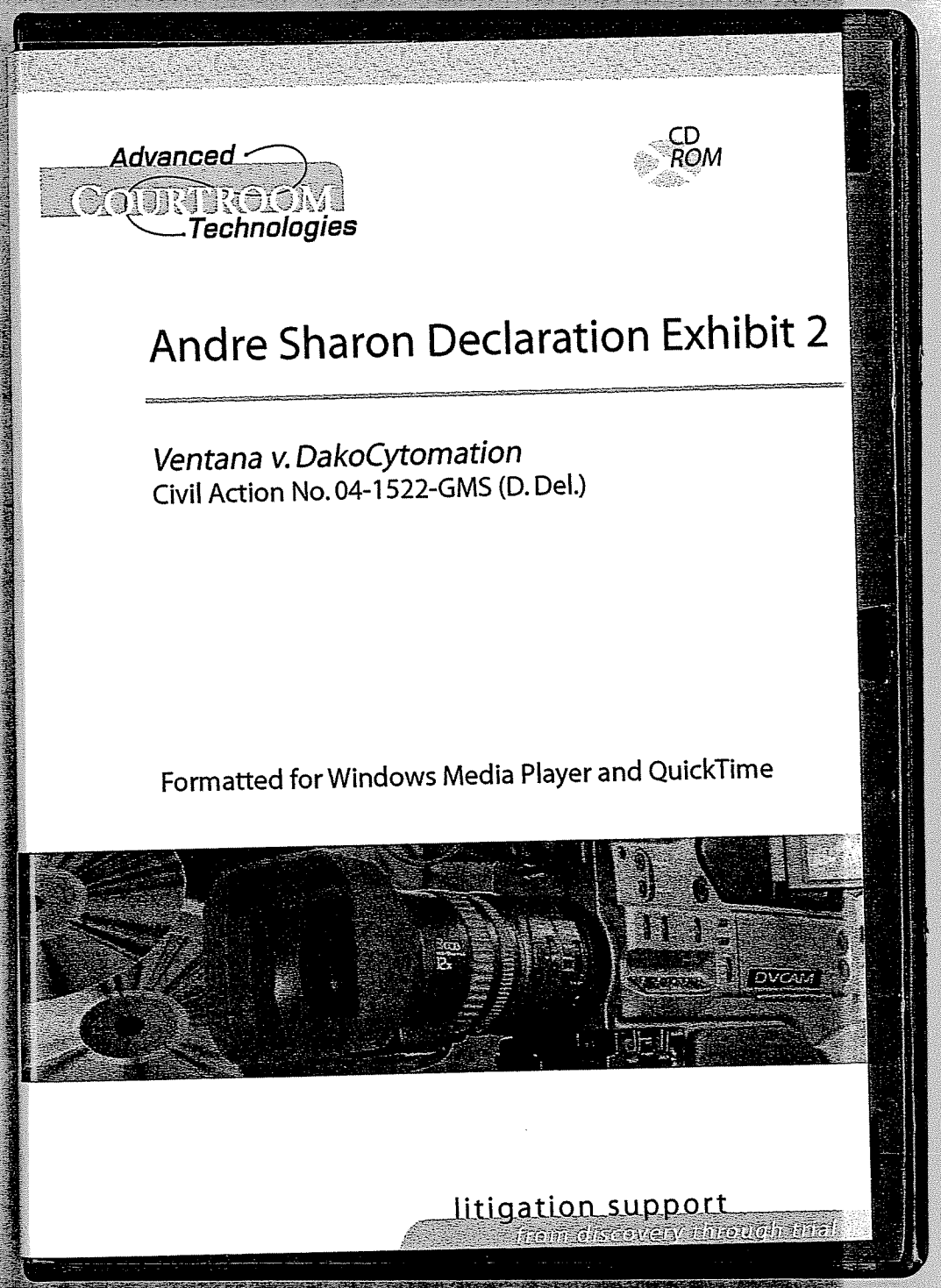
Other

Color copy of Artisan Staining System User Guide (Document Number 0000788, Revision A, June 2005), downloaded from pri.dakocytomation.com/0000788_reva_man_artisan_user_guide.pdf

EXHIBIT 2

CD-ROM TO BE INCLUDED

WITH HAND-DELIVERED DOCUMENTS


Advanced
COURTROOM
Technologies
CD
ROM
Andre Sharon Declaration Exhibit 2
Ventana v. DakoCytomation
Civil Action No. 04-1522-GMS (D. Del.)
Formatted for Windows Media Player and QuickTime
DVCAM
litigation support
from discovery through trial